

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
KOJI FUKUNAGA ET AL.) : Examiner: N.Y.A.
Application No. N.Y.A.) : Group Art Unit: N.Y.A.
(Continuation Under Rule 53(b) :
of PCT/JP00/05931, filed 08/31/00)
:
Filed: Concurrently Herewith)
:
For: INFORMATION COMMUNICATION SYSTEM,)
INFORMATION COMMUNICATION METHOD, :
INFORMATION SIGNAL PROCESSING)
DEVICE, INFORMATION SIGNAL :
PROCESSING METHOD, AND STORAGE)
MEDIUM) April 30, 2001

Commissioner for Patents
BOX PATENT APPLICATION
Washington, DC 20231

PRELIMINARY AMENDMENT

Sir:

Prior to calculation of the filing fee, please
amend the above-identified application as follows:

IN THE SPECIFICATION:

At page 1, immediately after the title, insert:

--CROSS REFERENCE TO RELATED APPLICATION

This application is a Rule 53(b) continuation of International Application No. PCT/JP00/059321, filed August 31, 2000.--.

IN THE CLAIMS

Please cancel Claims 2-68 without prejudice or disclaimer of the subject matter recited therein.

Please amend Claim 1 as follows:

1. (Amended) An information signal processing apparatus connected to a communication control network, [characterized by] comprising:

reset reception means for, upon issuing an update request when a network configuration must be updated in a remote network other than the communication control network connected to the information signal processing apparatus, receiving network specifying information for the issued update request, and a network update notification.

Please add Claims 69-115, as follows:

--69. The apparatus according to claim 1, wherein said reset reception means uses a predetermined address as a

register, detects write of the network specifying information at the address, and receives a network update occurrence notification of the remote network.

70. The apparatus according to claim 1, wherein the communication control network includes a communication control bus complying with IEEE 1394.

71. The apparatus according to claim 70, wherein a predetermined register is arranged in a core CSR architecture register space in an address space of the information signal processing apparatus connected to each communication control bus complying with IEEE 1394.

72. The apparatus according to claim 70, wherein a predetermined register is arranged in a serial bus register space in an address space of the information signal processing apparatus connected to each communication control bus complying with IEEE 1394.

73. An information signal processing method in an IEEE 1394 bus system in which a plurality of information

signal processing apparatuses are connected via a communication control network, comprising:

the step of, upon issuing an update request when a network configuration must be updated in a remote network other than the communication control network connected to the information signal processing apparatuses, receiving network specifying information for the issued update request, and a network update notification.

74. The method according to claim 73, further comprising the step of using a predetermined address as a register, detecting write of the network specifying information at the address, and receiving a network update occurrence notification of the remote network.

75. The method according to claim 73, wherein the communication control network includes a communication control bus complying with IEEE 1394.

76. An information signal processing method in an IEEE 1394 bus system in which a plurality of information signal processing apparatuses are connected via a

communication control bus complying with IEEE 1394,

comprising the step of:

notifying occurrence of remote bus reset when a plurality of buses are connected via a bridge, and bus reset occurs on a remote bus other than a connected bus.

77. The method according to claim 76, wherein a bridge connected to a bus on which bus reset occurs notifies an information signal processing apparatus connected to another connected bus of a remote bus reset occurrence notification containing bus specifying information for occurrence of bus reset.

78. An information communication system connectable to a serial bus via a serial bridge, wherein the serial bridge comprises:

at least two portals respectively connected to different serial buses;

a registration table for registering serial bus specifying information and information of a connected node for each connected serial bus;

monitoring means for monitoring bus reset on the serial bus connected to each portal; and

re-registration means for, when said monitoring means detects bus reset, rewriting contents of the registration table corresponding to the serial bus on which bus reset is detected in accordance with newly updated node information, and a change in system configuration can be recognized by updating the registration table.

79. The system according to claim 78, wherein the serial bus specifying information includes a bus ID assigned to each bus, and the node information includes a node ID assigned to each node.

80. The system according to claim 79, wherein the registration table registers, for each bus, all node IDs connected to the bus in association with a bus ID.

81. The system according to claim 78, wherein the serial bridge further comprises communication management means for managing a communication state of a node connected to the connected serial bus, and when said monitoring means detects bus reset, said monitoring means notifies, of re-registration, a node rewritten by said re-registration

means and a node having a communication state managed by said communication management means.

82. The system according to claim 81, wherein said communication management means comprises a communication state write portion in which a node communication state can be written for each node connected to the bus, and said communication management means manages the node communication state by writing information of a communication partner node in the communication state write portion.

83. The system according to claim 82, wherein the system further comprises confirmation means capable of confirming occurrence of bus reset on a bus connected to the communication partner node from the node connected to the serial bus, and if a node written when said re-registration means detects rewrite of the re-registration table in correspondence with detection of bus reset by said monitoring means corresponds to the node having the communication state managed by said communication management means, said confirmation means rewrites node information of said communication management means in correspondence with

re-registration, thereby enabling confirming occurrence of bus reset on the bus connected to the communication partner node.

84. The system according to claim 79, wherein the serial bridge comprises:

notification request reception means for receiving a notification request to a communication partner node from a node connected to a bus on which bus reset has occurred; and

notification means for notifying the communication partner node in accordance with the notification request from said notification request reception means.

85. The system according to claim 79, wherein the serial bus includes an IEEE 1394 bus complying with IEEE 1394, and the serial bridge includes an IEEE 1394 bridge complying with IEEE 1394.

86. An information communication method in an information communication system connectable via a serial bridge having portals respectively connected to different serial buses and a registration table for registering node information, comprising the steps of:

registering information of a connected node in addition to serial bus specifying information in the registration table for each serial bus connected to the serial bridge, monitoring bus reset on the serial bus connected to each portal, when bus reset is detected, rewriting, in accordance with newly updated node information, contents of the registration table corresponding to a serial bus on which bus reset is detected, and updating the registration table, thereby enabling recognizing a change in system configuration.

87. The method according to claim 86, wherein the serial bus specifying information includes a bus ID assigned to each bus, and the node information includes a node ID assigned to each node.

88. The method according to claim 87, wherein the registration table registers, for each bus, all node IDs connected to the bus in association with a bus ID.

89. The method according to claim 86, further comprising the step of, when the serial bus detects a bus reset, notifying a node, which communicates with a node

connected to the serial bus on which the bus reset is detected, of the bus reset on the bus connected to the communication partner node.

90. The method according to claim 89, wherein the node connected to the serial bus registers a node communication state capable of specifying a communication partner in a serial bridge corresponding to the bus during communication with another node, thereby enabling managing the node communication state.

91. The method according to claim 90, wherein the serial bridge rewrites, in accordance with a state after bus reset, a registration communication state of the node which communicates with the node connected to the bus on which a bus reset has occurred, thereby enabling the connected node to confirm occurrence of the bus reset on the bus connected to the communication partner node.

92. The method according to claim 86, wherein the serial bus includes an IEEE 1394 bus complying with IEEE 1394, and the serial bridge includes an IEEE 1394 bridge complying with IEEE 1394.

93. An information communication system having a first communication control network capable of connecting communication devices via a serial bus, a second communication network capable of connecting communication devices via a serial bus different from the serial bus of the first communication control network, and a connection device for enabling communication between the first and second communication control networks, wherein the connection device comprises:

interpretation means for interpreting an upper protocol used by communication between a first communication device connected to the first communication control network and a second communication device connected to the second communication control network; and

proxy means for performing, instead of the second communication device, processing which should be performed by the second communication device when a network configuration must be updated in the first communication control network, and the first and second communication devices can communicate with each other regardless of a network update request in the first communication control network.

94. The system according to claim 93, wherein the serial bus includes a communication control bus complying with IEEE 1394, and the connection device includes an IEEE1394bridge complying with IEEE 1394.

95. An information communication system including a first serial bus connected to a connection device, a first node connected to the first serial bus, a second serial bus different from the first serial bus, and a second node connected to the second serial bus, the first and second nodes being able to communicate with each other, wherein the connection device comprises:

interpretation means for interpreting an upper protocol used by communication between the first and second nodes; and

proxy means for performing, instead of the second node, processing which should be performed by the second node when bus reset occurs on the first serial bus, and when bus reset occurs on the first serial bus, the connection device performs processing which should be performed upon occurrence of bus reset between the first node and the connection device, thereby performing communication between the first

and second nodes regardless of bus reset on the first serial bus.

96. The system according to claim 95, wherein the serial bus includes a communication control bus complying with IEEE 1394, and the connection device includes an IEEE1394bridge complying with IEEE 1394.

97. An information communication method in an information communication system having a first communication control network capable of connecting communication devices via a serial bus, a second communication network capable of connecting communication devices via a serial bus different from the serial bus of the first communication control network, and a connection device for enabling communication between the first and second communication control networks, wherein the connection device interprets an upper protocol used by communication between a first communication device connected to the first communication control network and a second communication device connected to the second communication control network, and performs, instead of the second communication device, processing which should be performed by the second communication device when a network

configuration must be updated in the first communication control network, thereby enabling communication between the first and second communication devices regardless of a network update request in the first communication control network.

98. The method according to claim 97, wherein the serial bus includes a communication control bus complying with IEEE 1394, and the connection device includes an IEEE 1394 bridge complying with IEEE 1394.

99. A computer-readable storage medium which stores a computer program for realizing a reset reception function of, upon issuing an update request when a network configuration must be updated in a remote network other than a communication control network connected to an information signal processing apparatus connected to the communication control network, receiving network specifying information for the issued update request, and a network update notification.

100. The medium according to claim 99, wherein the reset reception function uses a predetermined address as a register, detects write of the network specifying information

at the address, and receives a network update occurrence notification of the remote network.

101. A computer-readable storage medium incorporated in a bridge that realizes a function of, when a plurality of buses of IEEE 1394 bus systems connected to a plurality of information signal processing apparatuses via communication control buses complying with IEEE 1394 are connected via bridges, and bus reset occurs on a remote bus other than the connected buses, notifying information signal processing apparatuses connected to other buses connected via bridges connected to the buses of occurrence of remote bus reset containing bus specifying information for occurrence of the bus reset.

102. A computer-readable storage medium incorporated in a connection device of an information communication system having a first communication control network capable of connecting communication devices via a serial bus, a second communication network capable of connecting communication devices via a serial bus different from the serial bus of the first communication control network, and the connection device for enabling communication

between the first and second communication control networks, wherein said medium stores computer program streams for realizing an interpretation function of interpreting an upper protocol used by communication between a first communication device connected to the first communication control network and a second communication device connected to the second communication control network, and a proxy function of performing, instead of the second communication device, processing which should be performed by the second communication device when a network configuration must be updated in the first communication control network, and for realizing communication between the first and second communication devices regardless of a network update request in the first communication control network.

103. A computer-readable storage medium incorporated in a connection device of an information communication system including a first serial bus connected to the connection device, a first node connected to the first serial bus, a second serial bus different from the first serial bus, and a second node connected to the second serial bus, the first and second nodes being able to communicate with each other, wherein said medium stores computer program

streams for realizing an interpretation function of interpreting an upper protocol used by communication between the first and second nodes, and a proxy function of performing, instead of the second node, processing which should be performed by the second node when bus reset occurs on the first serial bus, and for enabling communication between communication between the first and second nodes regardless of bus reset on the first serial bus by performing processing which should be performed upon occurrence of bus reset between the first node and the connection device when bus reset occurs on the first serial bus.

104. A computer-readable storage medium incorporated in a connection device of an information communication system having a first communication control network capable of connecting communication devices via a serial bus, a second communication network capable of connecting communication devices via a serial bus different from the serial bus of the first communication control network, and a connection device for enabling communication between the first and second communication control networks, wherein said medium stores computer program streams for interpreting an upper protocol used by communication between

a first communication device connected to the first communication control network and a second communication device connected to the second communication control network, and performing, instead of the second communication device, processing which should be performed by the second communication device when a network configuration must be updated in the first communication control network, thereby enabling communication between the first and second communication devices regardless of a network update request in the first communication control network.

105. A serial bus bridge having at least two portals respectively connected to different serial buses, wherein each of said portals comprising:

detecting means for detecting a bus reset of a serial bus to which the portal is connected;

storage means for storing ID information designating a node on a network which comprises a plurality of serial buses, including serial buses to which said portals are connected, interconnected via serial bus bridge(s);

receiving means for receiving a control message including the ID information designating a node on the

network, wherein said control message further includes a registration command or a deletion command;

wherein each of the portals stores the ID information in the control message into the storage means if received control message includes the registration command, deletes the ID information stored in the storage means if received control message includes the deletion command; and

a transmitting means for transmitting a notice message including a bus ID information, designating a serial bus in which the detecting means detected a bus reset, to the node which is designated by the ID information stored in the storage means.

106. A terminal apparatus operable as a node on a network which comprises a plurality of serial buses interconnected via serial bus bridge(s), wherein said terminal apparatus transmits said control message, including an ID information which designates a node on the network, to the portal of the serial bus bridge according to claim 105.

107. A terminal apparatus operable as a node on a network which comprises a plurality of serial buses interconnected via serial bus bridge(s), wherein said

terminal apparatus receives a control message, including bus ID information which designates a serial bus, from the portal of the serial bus bridge according to claim 105.

108. A serial bus bridge according to claim 105, wherein the serial buses complying with IEEE 1394.

109. A terminal apparatus according to claim 106, wherein the serial buses complying with IEEE 1394.

110. A terminal apparatus according to claim 107, wherein the serial buses complying with IEEE 1394.

111. An information communicating system according to claim 108, wherein the serial buses complying with IEEE 1394.

112. Computer program streams for a portal included in a serial bus bridge having at least two portals respectively connected to different serial buses, wherein said computer program streams enabling the portal; detecting function of detecting a bus reset of a serial bus to which the portal is connected;

storage function of storing ID information designating a node on a network which comprises a plurality of serial buses, including serial buses to which said portals are connected, interconnected via serial bus bridge(s);

receiving function of receiving a control message including the ID information designating a node on the network, wherein said control message further includes a registration command or a deletion command wherein the portal stores the ID information in the control message by the storage function if received control message includes the registration command, deletes the ID information from the storage of the storage function if received control message includes the deletion command; and

a transmitting function of transmitting a notice message including a bus ID information, designating a serial bus in which the detecting function detected a bus reset, to the node which is designated by the ID information stored by the storage function.

113. A computer-readable storage medium stores computer program streams according to claim 112.

114. Computer program streams for an information communication system connectable via a serial bridge having portals respectively connected to different serial buses and a registration table for registering node information, wherein said computer program streams enabling the information communication system to perform the following operations; registering information of a connected node in addition to serial bus designating information in the registration table for each serial bus connected to the serial bridge, monitoring bus reset on the serial bus connected to each portal, when bus reset is detected, rewriting, in accordance with newly updated node information, contents of the registration table corresponding to a serial bus on which bus reset is detected, and updating the registration table, thereby enabling recognizing a change in system configuration.

115. A computer-readable storage medium stores computer program streams according to claim 114.--

REMARKS AND CLAIM TO PRIORITY

This is a Rule 53(b) continuation application of International Application No. PCT/JP00/05931, filed August 31, 2000.

Claims 1 and 69-115 are pending in this application.

The specification has been amended to include reference to the International PCT Application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address given below.

Respectfully submitted,



Attorney for Applicants

Registration No. 28286

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200